



Tobacco-Pipe Manufacturing in Early Maryland: The Swan Cove Site (ca. 1660-1669)

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Situated on the banks of a relic cove off Mill Creek in Anne Arundel County Maryland, the Swan Cove Site (18AN934) was occupied by planter and tobacco-pipemaker Emanuel Drue from perhaps the 1650s until his death in 1669. Drue used state of the art, European production techniques in the manufacture of tobacco-pipes made of native clays. Drue produced two main forms, a “Chesapeake” style angular elbow pipe and a European “belly bowl.” The pipes and kiln debris recovered from intact features at Swan Cove characterize a seventeenth-century industry that has yet to be studied in the New World. The evidence of pipemaking at Swan Cove challenges many assumptions about locally-made pipes and undoubtedly will energize further studies of locally-made pipes in the Chesapeake.

Introduction

Swan Cove is one of only eight known sites that were part of the 1649 settlement of Providence. Over the past decade, the town of Providence has been the subject of investigation and excavation by Anne Arundel County’s *Lost Towns Project* (Figure 1). Initial investigations at the Swan Cove site tobacco-pipe kiln are providing new insights into the tobacco trade, pipemaking, and some of the earliest industrial activity on the seventeenth-century frontier of Maryland.

Scholars have long been interested in the practice of local tobacco-pipemaking in the Chesapeake Bay region, variously concluding that European, indigenous, and slave populations were involved in the production of terra-cotta pipes in the seventeenth century (Emerson 1988, 1994). Particularly intriguing theories associate their use with servants and slaves, as well as African-American and Creole populations (Mouer 1993, Neiman and King 1999).

While locally-made pipes are abundant at seventeenth-century Chesapeake sites, archaeological evidence for the physical production of these pipes is extremely limited. When found, such evidence consists solely of damaged pipes or unusual clay “shavings” or “blobs” (Tom Davidson, Ann Markel, personal communications 2000). In some instances, these clues are attributed to small-scale pipe manufacture in home fireplaces (Emerson 1988). In 1997, excavations at Jamestown, Virginia may have uncovered evidence of early pipemaking, supported by the recovery of pipes made of local clays, a debatable “saggar” (a type of kiln furniture), and documentary research



Figure 1: Volunteer Mac Milhorne excavates Feature 7.

and his daughters were cared for and educated appropriately by friends of the family (MSA 1669:349).

The next reference to Swan Cove is in 1707, revealing that Henry Merriday, a planter, “has long been seated” on the tract of land known as Swan Cove (MSA 1707: 611). In 1721, Amos Garrett added this parcel to his larger plantation landholdings, purchasing the property from Henry Merriday and his son for £44.2.9 sterling and in consideration of livestock (MSA 1721: 455). Swan Cove ceases to be occupied as a domestic site after this land transaction, until William Storck acquired the property in the mid-twentieth century.

Archaeological Investigations

Amateur archaeologist Bob Ogle and property owner Bill Storck discovered the site during landscape grading in the late 1970s and assembled a collection at that time. The site was brought to the attention of Anne Arundel County Archaeologist, Al Luckenbach, in 1991. Anne Arundel County’s *Lost Towns Project* conducted preliminary investigations in 1992, and returned to conduct additional testing in 1998. Extensive excavations began in the fall of 2000 with excavation units now numbering nearly 70 5-x-5 ft. units (Figure 3). These excavations have been augmented by geophysical investigations, including comprehensive magnetometer and ground penetrating radar surveys. Artifacts have been processed and stored at Anne Arundel County’s *Lost Towns Project* Archaeology Lab in Annapolis, Maryland. In addition, Mr. Ogle’s collection has been made available to the *Lost Towns Project* for study.

Swan Cove is in close proximity to at least three other Providence sites. Located 3000 ft. northwest of Burle’s Town Land, 2500 ft. west of Leavy Neck, and 6000 ft. west-northwest of the Tanyard, the Swan Cove site is a central component of the hamlet-type settlement of Providence.

Typical of the other known seventeenth-century Providence sites, Swan Cove is immediately adjacent to a spring, near a cove that provides access to a navigable waterway (Mill Creek), and on a flat spot of land at an elevation of about 20 ft. above mean sea level.



Figure 3: Anne Arundel County’s Historic Sites Planner, Donna Ware, excavates Feature 19.

Emanuel Drue’s Pipe Kiln and Kiln Debris

The kiln foundation itself has thus far eluded discovery. Although the search continues, it is quite possible that it failed to survive the ravages of time, since plowing, erosion, grading, and ditch digging all occurred at the site over the last three and a half centuries. However, the vast quantities of kiln debris found inside several still-intact trash features at Swan Cove appear to represent periodic rebuilding of the structure, and contain invaluable clues as to its nature.

Pieces of the kiln’s interior structure are



Figure 4: Loaves recovered from Swan Cove.

represented by what we have branded “loaves.” These handmade clay objects are vaguely shaped like bread; they are ovoid, concave on the bottom and convex on the top (Figure 4). The loaves always exhibit clear evidence of high firing on one face (either the top or side) and are almost of “salmon brick” consistency on the other face. Drue’s fingerprints frequently provide evidence of the homemade nature of these objects. Loaves undoubtedly represent either the floor of the kiln itself, or objects that sat on the floor.

Interestingly, no traditional, rectangular-shaped bricks have been found at the site, although it would have been quite simple from Drue to make them himself. Even the imported yellow Dutch bricks, so common at other contemporaneous Providence sites, are not seen at Swan Cove. Numerous large, river cobbles have been recovered, which may

be somehow involved in the tobacco-pipe kiln construction (Figure 5). This seems to be confirmed by the discovery of cobbles with one surface vitrified to a glaze-like consistency by exposure to extremely high temperatures.

The most frequently encountered kiln debris consists of nearly 200 pounds of “muffles.”

Muffles are large, crude ceramic vessels, roughly 18 in. in diameter, used in the kiln to distribute heat evenly and protect the contents from heat damage (Figure 6.) At Swan Cove, they are made with stacked rings of clay reinforced by broken tobacco stems. The tobacco-pipe stems are placed within the vessel’s fabric at opposing angles to form a herringbone pattern. This kept the stacked rings locked together. Muffles recovered from Swan Cove appear to have met a catastrophic end. They show evidence of having undergone extreme heat and stress before



Figure 5: A vitrified river cobble.



Figure 6: Muffle fragments recovered from Swan Cove.

finally disintegrating, at which point they were removed from the kiln.

Other kiln furniture has been recovered in small numbers, including two examples of an interesting form called a “cross-pipe prop” (Figure 7). The only other documented example was excavated in Chelmsford, England (Peacey 1996: 40,41). Another, enigmatic item is perhaps a “bun” which was used to stack layers of props within the muffle (see Peacey 1996: 46-49) (Figures 8 and 9).

Fragments of what appears to be a low-fired earthenware kiln “dish” used as a kiln spacer (see Peacey 1996: 50-53) also were found. In traditional archaeological parlance, this vessel might be termed “Drue Ware,” its crude, handmade form argues strongly for its expedient nature. Its crudity also seems to speak volumes concerning Emanuel

Drue’s lack of familiarity with the construction of traditional English clay pots.

In studying the kiln’s output, the imprints of at least eight different pipe-decorating tools have been noted. These include three decorative stamps, a smaller circular punch, and four distinct rouletting tools (Figure 10). One of the most interesting artifacts recovered from the Swan Cove excavations is one of the

decorative stamps used by Emanuel Drue (Figure 11). This is an exceedingly rare object. Even in England, only one similar clay stamp has been found during the investigations of over 140 kiln sites (Peacey 1996). Comparable examples from the New World are unknown.

Kiln-related Features

As stated, several intact features discovered at Swan Cove promise to reveal significant information about Drue’s pipemaking operation. The two large features primarily discussed below, Features 7 and 19, yielded a total of 1,171 pipe fragments and more than 160 pounds of muffle and loaf fragments. Two much smaller pit features, Features 4 and 5, also contained small amounts of kiln and pipe debris and appear to be related to the primary



Figure 7: A cross-pipe prop, used for supporting pipes within the kiln.



Figure 8: Kiln furniture known as a bun.

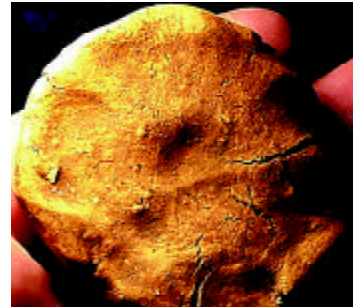


Figure 9: Drue's fingerprints on the back of the bun.



Figure 10: Examples of decorations used by Drue.



Figure 11: The stamp used by Drue to decorate his pipes.

pits. All were sealed deposits clearly dating from the period of pipemaking at Swan Cove, or roughly between the late 1650s and 1669 (Figure 12).

These features are certainly indicative of an intensive kiln operation, although their precise function has not yet been determined. In the absence of a kiln structure, these features currently provide the only indication of the exact nature of Drue's operation.

The two large pits detailed below were adjacent to one another, with Feature 7 just to the north of Feature 19. Feature 7 is a large rectangular pit, approximately 6-x-3 ft., averaging 1½ ft. in depth (Figure 13). Much of the kiln debris was concen-



Figure 12: Feature 7, excavations in progress.

trated in the northwestern portion of the feature, and included raw clays in numerous colors. Lightly interspersed throughout were domestic artifacts, oyster shells, bones, etc. The ceramics recovered consisted of at least twenty individual lead-glaze redware vessels (80 percent of the

assemblage) and only two delftware vessels (8 percent), which were concentrated toward the eastern half of the feature. The remaining 12 percent of the ceramic assemblage is represented by one vessel each of Rhenish brown, North Devon gravel temper, and Midlands purple. Feature 7 also produced numerous burned fragments of imported Dutch roofing material (pantile), interspersed with the kiln debris. The base of this feature was sloping, with a notably deeper section occurring in the eastern half.

Feature 19 measured about 5 ft. across and 1 ft deep to a level bottom

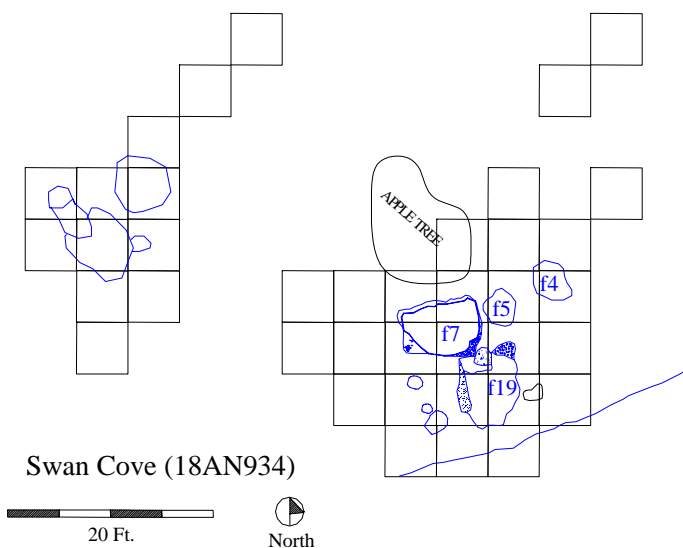


Figure 13: Site plan of Swan Cove (2001.)

(Figure 14.) Concentrations of kiln debris, including large pockets of multicolored raw clays, were found throughout this feature. Along with other domestic debris, the primary ceramics recovered include seven delftware vessels (39 percent) and three lead-glaze redware vessels (17 percent). The remaining ceramic assemblage consisted of one vessel each of Rhenish blue and gray, Rhenish brown, Borderware, Midlands purple, North Devon gravel-tempered, North Devon sgraffito, and Borderware. Importantly, there were no cross-mends between the Feature 19 and Feature 7 ceramics.

The relative frequency of utilitarian redwares and concentrations of pantile in Feature 7, in comparison to the few lead-glaze redwares and pantile found in Feature 19, provides the basis for speculating about the kiln operation. English pipe expert Allan Peacey has noted that inexpensive redwares are often used as props when placing items in a kiln. He has also commented that pantiles, with their curved shape, would make

excellent covers for vent or heat trenches (Allan Peacey, personal communication, 2001).

The stratigraphic distributions of various artifacts within these features provide hints as to the possible location and structure of the kiln. It appears, based upon the density of kiln-related artifacts recovered from the area surrounding Features 7 and 19, that the kiln production area was located to the west of these features, while more domestic activities may have been concentrated to the east. The intermingling of kiln and occasional domestic debris does suggest that the work and home areas were not necessarily well-segregated, lending support for the notion of a cottage industry, although on a relatively massive scale.

Based upon the assemblage from each of these pits, it appears that the artifacts are representative of an active pipe kiln and do not represent the kiln's demise. These features are invaluable as they provide snapshots of a tobacco-pipe kiln at different points of operation. Additional insights into the different uses for each of these features can be

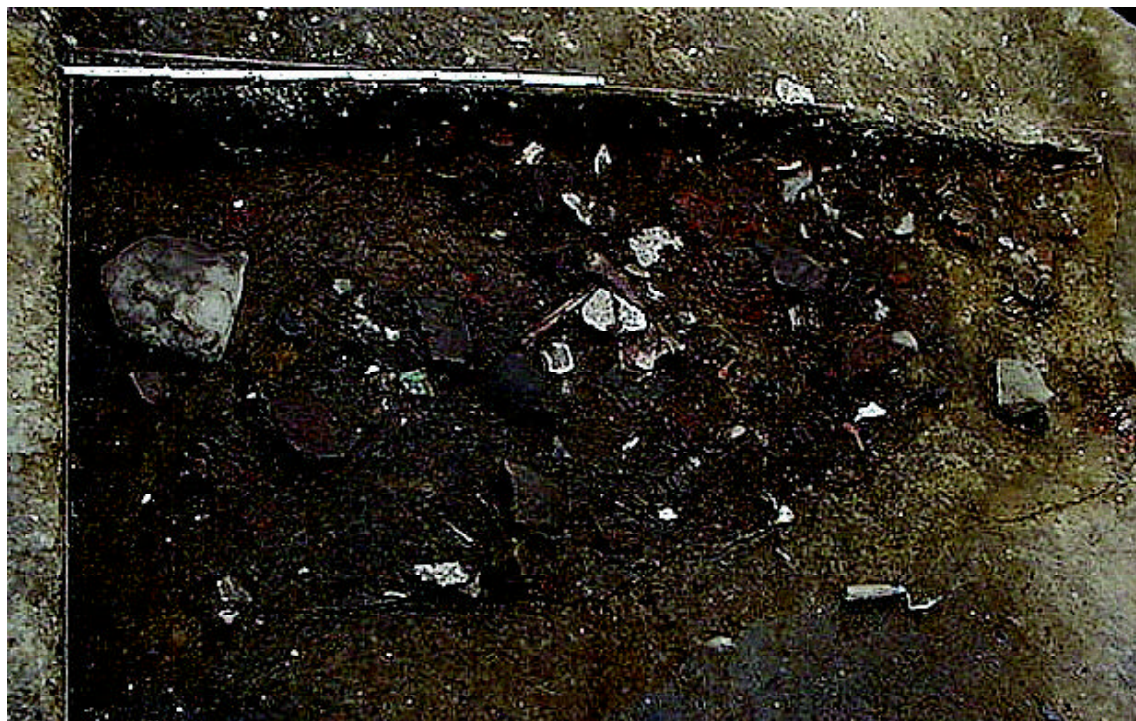


Figure 14: Feature 19, excavations in progress.

provided by considering the physical characteristics of Drue's pipes, as well as the raw clays, kiln furniture and vessels Drue used to produce the pipes.

Raw Clays from Features 7 and 19

The actual raw, unfired clays Drue used to produce the myriad colors of pipes at Swan Cove have been recovered from Features 7 and 19, providing a unique opportunity to explore Drue's manufacturing process (Figure 15). Not surprisingly, like the pipes they produced, the raw clays vary greatly in color. Drue clearly went to a great deal of effort to obtain a spectrum of different colored clay. Interestingly, they do not originate at the site itself,

which only produces a yellow variety common in the region. Although not yet confirmed by chemical analyses, Drue's clays seem to have originated approximately 13 miles up the Severn River where banks of clay outcroppings were discovered in



Figure 15: Raw clays recovered from intact features at Swan Cove.

December of 2001 (Figure 16). Pockets of raw clay were distributed throughout the deposits with pipes and muffles. In Feature 7, the raw clays



Figure 16: Potential source of Drue's raw clays discovered on the Severn River.

exhibit five different colors--from reddish pink, to yellow, to dark and light gray to a nearly pure white or kaolin hue. In Feature 19, the color of clays recovered was much more limited, restricted to a gray hue and a greenish-gray hue.

While the clay colors found in both features are reflective of the pipe assemblage across the site, it is interesting to note the lack of greenish clay in Feature 7 and the lack of white, pink and light gray clays in Feature 19. These facts, together with the lack of ceramic cross-mends, and a different ratio of pipe forms (discussed later) strongly suggest that the two features are not perfectly contemporaneous. This conclusion is important because during the initial excavations of Feature 7, consideration was given to whether the contents derived from the kiln's destruction. Since generally similar muffle, loaf, and kiln furniture fragments came from both pits, the materials clearly had to be attributed to some kind of period refurbishment of the kiln, rather than its demise.

Kiln Debris from Features

Interestingly, the muffles recovered from these two major pits demonstrate variations in construction technique that might be attributed to different use patterns. Typical of the 69 pounds of muffle in Feature 7 are signs of reduction firing and in many samples, thermal glazing can be found on the exterior of the vessels. The muffles themselves are surprisingly thin, often constructed in layers, with reinforcements of waster pipe stems within the walls, usually in a herringbone pattern. Such construction is seen in the home-counties around London, England (Allan Peacey, personal communication 2000). Thus, English-derived muffle construction provides another indicator as to Drue's European origins. This layering construction indicates that the muffles were used repeatedly over a relatively long period of time. The muffles are a lighter terra-cotta shade with extensive

whitewashing or luting. According to Peacey, the application of luting (a whitewash applied to the interior of the muffle) is a gauge of the number of firings for which a muffle may have been used (Allan Peacey, personal communication 2001).

The 93 pounds of muffle recovered from Feature 19 exhibited different physical characteristics. The muffles had a thicker-walled construction and virtually no pipe reinforcements. Also, the fragments were a more consistent dark gray to terra-cotta hue. Relatively few pieces showed signs of high firing and the resulting thermal glazing. The muffle recovered in Feature 19 tended toward larger fragments than those found in Feature 7.

The meaning of these construction variants remains within the realm of speculation. Perhaps the thinner-walled vessels were used in a more controlled firing environment, whereas the thicker vessels of Feature 19 would have been used in a lower firing environment. Thin-walled vessels with pipe temper may have allowed for more air circulation, thus more heat control would be needed for positive results. Perhaps the thinner vessels were seen as more disposable in nature, thus the re-application of clays on the interior and the layering of luting were intended to prolong the life of these vessels. The thicker, more robust vessels found in Feature 19, although cruder, may have had a longer life expectancy. Until more experimentation can be conducted to recreate firing environments, questions remain as to the functional realities of muffle vessels.

The two kiln-related features discussed above were clearly crucial to the production and firing of tobacco-pipes at Swan Cove. The pits appear to be nearly, but not quite, contemporaneous, and neither appears to represent the destruction of the kiln. Archaeological evidence strongly suggests a physical division between the two pits, perhaps a wall, which would also signal a division of activity

areas. The northern pit (Feature 7), with a more refined muffle construction, a broader variation of pipe colors, and heavier concentrations of both pantile and kiln-related utilitarian ceramics, indicates an activity area that is closely related to kiln use and operation. The pantile and lead-glazed redware appear to have been integral to the firing process and were likely used as kiln props to support the pipes during firing. The southern pit (Feature 19), with muffle constructed in a less sophisticated fashion and a higher percentage of refined ceramics, appears to be somewhat more multi-purpose and less central to the kiln operation, even though it shows evidence of use in conjunction with kiln operations.

Emanuel Drue's Tobacco-Pipes Drue's Principal Types

The pipes Emanuel Drue made at Swan Cove are very likely the products of the two molds mentioned in his 1669 inventory. Two main types include an angular elbow type, which is a classic "Chesapeake" pipe form (Drue Type A) and a traditional mid seventeenth-century English "belly bowl" form (Drue Type B).

The straight-sided Drue Type A bowl (LT Type 15.01) is an angular elbow form that is quite familiar in the universe of Chesapeake and Native American pipe forms (Figure 17). The pipe is distinguished by the relatively sharp angle between the stem and bowl. The bowls average 1-¾ in. in height. There is a smooth transition from stem to the joint and through the elbow, with no heel. This bowl form has a small volumetric capacity, averaging <4.25 ml, with a notably narrow interior. Several of these bowls have compressed edges, likely a result of the kiln loading and firing pro-



Figure 17: Drue Type A (LT Type 15.01).

cesses.

Distinctive to the Drue Type A is the propensity for decoration, including extensive rouletting on stem and bowl rim, along with the application of various stamps (Figure 18). Several examples exhibit extensive decoration. Thus, Drue Type A bowls seem to be following a decorative grammar derived from the Chesapeake, not England.

The Drue Type B belly bowl form from Swan Cove (LT Type 11.1) is short, averaging 1½ in. in height, with a bulbous bowl. This bowl form has a distinctive broad, flat heel, approximately ½ in. in diameter. So similar is this pipe form to English



Figure 18: Typical decorations on Drue Type A.



Figure 19: Drue Type B (LT Type 11.1).

forms of the mid-seventeenth century that it seems apparent that this pipe was made from a mold brought from England and in an English tradition of pipemaking. This pipe form, produced in a range of white and terra-cotta clays, was recovered at neighboring Providence sites in Anne Arundel County, including seven from Homewood's Lot (n=9) and Burle's Town Land (n=3) (Figure 19). At first glance, two of the belly bowl from Homewood's Lot would seem to be European imports, yet measurements and close inspection of the clay indicates local manufacture.

Although Drue used a range of color variations (decidedly not an English characteristic), he limited the decoration of belly bowl pipes to very simple rouletting around the rim, like most contemporary English examples. Exceptions include a recovered heel featuring a wheel stamp, much like a traditional English maker's mark, and a white belly bowl fragment with the same stamped design on its side. These two fragments may belong to the same pipe. Minimalism and conformity to Old World vocabularies appear to have been the predominate decorative traits of Drue Type B.

It is important to note that when Drue Type B pipes are produced in a hard, snow-white variety, they are virtually indistinguishable from European forms. Before the investigations at Swan Cove these pipes would have been considered export varieties without question.

Since the two primary pipe forms were recovered from generally contemporaneous contexts, it is not possible to determine if one pipe form predates the other. Clearly, there is a higher level of production for the Drue Type A form on site, suggesting that this form was more in demand in the marketplace.

The belly bowl forms recovered challenge assumptions held about European preferences and trade networks. The preference for Drue Type A pipes suggests a transition from European tastes to a new native form of pipe--one that is being locally produced, marketed, and sold by colonists. This raises the questions of when and why Drue developed this new, form which resembles a trade pipe. Was the antecedent for the form and decoration on Drue Type A pipes based on his observation of Native American pipes? Did this pipe's form influence the American Export boom that dominated the pipe trade through the eighteenth century?

Drue Specialty Pipes

In addition to the two standard types of pipes, Emanuel Drue apparently felt the occasional need for greater artistic expression. This is evidenced by the recovery of at least two unique, handmade



Figure 20: Drue Type C (LT Type 20.01) with a unique wheel stamp on the heel recovered from Burle's Town Land.

pipes that appear to be presentation pieces, bearing witness to Drue's considerable abilities as a decorator. This claim is supported by the recovery of a unique example of what has been labeled Drue Type C from the home of Drue's neighbor, Robert Burle (Figure 20). This bowl form features a large heel with an unusual dot, circle, and diamond design. The exact clay stamp tool used in making this design was recovered from the Swan Cove site,



Figure 21: Drue Type D, the Crumn horn pipe.

making it possible to identify this handmade pipe bowl as a Drue Type C (LT Type 20.01).

Drue's most impressive example of specialized production is seen in the Drue Type D pipe (Figure 21). The Crumn horn pipe is fashioned to resemble a horn—perhaps that of various archaic European cattle breeds. Detailed comparison of the Crumn horn length and dimensions with a complete Drue Type A reveals a very high statistical possibility (96 percent) that the horn pipe originated in the Drue Type A mold and while still green and soft, and was handcrafted into an elaborately shaped form. A combined moldmade/handfinished technique is not uncommon according to Allan Peacey, yet often the handmade characteristics overshadow the

moldmade features (Allan Peacey, personal communication, 2001).

Drue decorated this piece with multiple stamps and rouletting, and it clearly represents a decorative extreme. The Drue Crumn horn shows the result of at least 94 individual hand actions involving six different tools. In addition to the individual stamps, three motifs are created by the combined use of these tools. This is clearly not an economic

method with which to approach the manufacture of what was, after all, an inexpensive and highly fragile item. This fact is particularly noteworthy at a time when the value of labor in the Chesapeake was so high that its expense was considered a driving force in the economy, influencing aspects as diverse as housing construction and the advancement of the slave trade (Carson et al. 1988). This extremely unusual pipe has only one known analogy recovered in Holland, which now resides in the Pijpenkabinet museum in Amsterdam. The Dutch example--

nearly identical in shape, size, and decorative style--has been assigned a general date of ca. 1650.

It seems more than plausible that Drue modeled his Crumn horn after a very similar pipe, perhaps one he had seen before emigrating to the New World. Until more is learned of Drue's activities before he came to Providence, how Drue came to make a Crumn horn pipe could be the source of endless speculation. As an expression of folk art, Emanuel Drue's Crumn horn pipe must stand near the pinnacle of his body of work.

A Non-Drue Form

A final terra-cotta form, represented by at least four heel fragments, has been recovered from

Swan Cove, however it does not appear to have been one of Drue's products. This form has a weak, oval-shaped heel and is made of distinctive grainy, brownish clay. No complete bowls with this characteristic have been recovered from Swan Cove, but were abundant at the Broadneck site, which is narrowly dated to the 1650s. Along with the four recovered from Swan Cove, the comparable pipes from the Burle's Town Land site, and an early (1660-1665) sealed feature from Homewood's Lot, this form has been classified as *Lost Towns* Type 11.2, and is often referred to as a "Broadneck" pipe.

Pipes with this form have been recovered from Pope's Fort, a Puritan-occupied site in St. Mary's County that dates to the 1640s (Miller 1991). This type of pipe has also been recovered in abundance from a southern Virginia site. It appears that this form originates near the Chesopean site (1630-1650), south of the James River in Virginia (Taft Kiser, personal communication 2001).

Considering the broad regional distribution and the Puritan associations with each of these sites, the Broadneck pipe appears as a possible marker for the Puritan Diaspora, tracing the migration of Puritans who originate in Southside, Virginia, travel through St. Mary's County and settle in Anne Arundel County's Providence. The discovery of this form at Swan Cove supports the assertion that the Drue family occupied the site during the early 1650s despite the scarcity of archival evidence. As far as can be determined, Drue's bowl form is not found in deposits dating after ca. 1660.

Pipe Forms and Decorations

Across the site, the frequency of Drue Types A and B pipes are skewed decidedly toward the Drue Type A form. Of 1,171 pipe fragments recovered from Features 7 and 19, 113 bowls and joint fragments are Drue Type A, while only 18 bowls can be attributed to Drue Type B. The two primary

pit features present variations on these ratios of occurrence, with 84 Drue Type A pipes to only 5 Drue Type B pipes recovered from Feature 7 (94 percent Type As). Feature 19 has a notably higher frequency of Drue Type B forms (n=13, or 69 percent), though the English-derived belly bowl is still in the minority at Swan Cove. As noted above, the Drue Type A form exhibits more decoration, with frequent stamping and rouletting as the primary decorative motifs. The Drue Type B form is by comparison, sparsely decorated. With only a few exceptions, this type B form has only simple rouletting, usually on the rim, as decoration.

The remainder of the pipe forms recovered from excavations immediately adjacent to Features 7 and 19 include 1 LT Type 1.00 (heeled belly bowl), 1 LT Type 2.00 (straight-sided heeled), 2 LT Type 5.00s (trade pipes) and 4 LT Type 11.2s (a terra-cotta "Broadneck" style).

Stem Bore Dating

Terra-cotta pipe stem bores were analyzed primarily to discern if European pipemaking techniques and tools were being used in Drue's production. The possession of brass pipe molds would suggest that Drue learned his pipemaking craft in England. It is very likely that Drue's locally produced pipes might produce evidence for the use of European-made tools, such as wires for boring. If this was the case, a clear correlation between the pipe stem bores for comparable white pipes and for the terra-cotta pipes should be evident. The Binford date for both features was 1683, at least 14 years too late for the Drue occupation. Interestingly, the Hanson dates for each feature provide a better correlation to the expected occupation date based on archival data. The Hanson date for Feature 7 was 1670 (+/- 29 years) and 1682 (+/- 24 years) for Feature 19. In both cases, using the lower extremes of the deviation provides the more accurate date.

Such analysis may be useful in assessing the “relative” bore stem of Chesapeake pipes in relation to trends seen in European-manufactured pipes. Should consistent patterns be found, it may be possible to develop a bore stem dating formula more specific to locally-made or Chesapeake pipes. Seth Mallios and others (2001) have explored such speculation when considering Chesapeake or “Colono” tobacco in the James River Valley of Virginia.



Figure 22: Range of pipe colors from Swan Cove.

Color Variations in Drue Pipes

All Drue products have been found in an extraordinary array of colors. These range from black, slate gray and dark brown to tan, orange, pink, off-white, and pure white (Figure 22). It was first assumed that this diversity of color was indicative of a lack of temperature and oxygen controls in Drue’s kiln. These variables can make identical clays fire to different shades and hues. However, as intact trash deposits were excavated, and numerous lumps of discarded, unfired clay recovered, it became apparent that Drue was deliberately experimenting with the production of pipes from different colored clays. Slate gray, green, white, yellow, pink, and variegated pink/white varieties were encountered, and soon the expression “gourmet clay” was prevalent among the excavators. More about Drue’s production and possible market can be gleaned when considering

the variations between pipe colors found in Features 7 and 19 (Table 1).

The most common color found in both features were pipes in traditional terra-cotta colors, orange to brown in hue. The next most common color present in both features was buff, representing nearly 19 percent of the combined feature totals. Interestingly, Feature 7, with a predominance of Drue Type A forms, also had more buff-colored pipes. Next, in frequency overall, are agated pipes, followed closely by white-clay pipes in Drue forms, which are often indistinguishable from the clay used in European counterparts.

White pipes accounted for almost 16 percent of the overall color selection. Next in color frequency were dark gray pipes with extremely hard bodies.

Table One: Variation in pipe colors.

| Prov. | Clay (ozs.) | Terra Cotta | Buff | White | Pink | Agated | Dark Grey | Total |
|-----------------------|-------------|-------------|--------|--------|--------|--------|-----------|-------|
| F7 | | 18.5 | 24.3 | 15.4 | 10.9 | 22.2 | 10.6 | 101.9 |
| % | | 18.16% | 23.85% | 15.11% | 10.70% | 21.79% | 10.40% | |
| F19 | | 25.7 | 5.3 | 9.6 | 0.6 | 4.4 | 10.1 | 55.7 |
| % | | 46.14% | 9.52% | 17.24% | 1.08% | 7.90% | 18.13% | |
| F 7 and F 19 combined | | 44.2 | 29.6 | 25 | 11.5 | 26.6 | 20.7 | 157.6 |
| % | | 28.05% | 18.78% | 15.86% | 7.30% | 16.88% | 13.13% | |

These pipes appear to have been overfired, which could account for their extremely dark appearance. The original clay color is difficult to determine. One might speculate that the dark gray pipes were wasters—thus, not desirable in the Providence marketplace. The final, and least frequent, color of pipe found at Swan Cove is pink—some could be described as “bubble-gum” pink. This pipe color has no precedence that we can identify and obviously represents a unique aesthetic.

Agated Pipes

Drue used the various clay colors available to him in surprisingly artistic ways. Drue did more than simply experiment with different color clays, he also demonstrated a proclivity to mix them in order to achieve an agatized effect, slip them with a thin wash of different colored clay, and decorate them with trailed clay slips. Whether this represents the mind of a scientist or the sensibilities of an artist remains a matter of perspective.

Beyond what might be considered incidental swirling or agating of pipes, it appears that Drue used agating as a conscious design motif—developed for an aesthetic, not simply as a by-product of clay availability. Nearly 22 percent of the pipes recovered from Feature 7 and 8 percent of the pipes recovered from Feature 19 are agated. The production of pipes in mixed colors is a deliberate attempt to use the color variations in the local clays for design purposes. Several pipes have been recovered which have a distinctive striped effect, produced by layering clays in a spiral around the stem (Figure 23). This design might be best described as a “barber pole” design. As far as is known, there is only one other tobacco-pipemaker on either side of the Atlantic who even attempted anything similar.

Currently the subject of investigation by Taft Kaiser, in cooperation with the *Lost Towns Project*, this producer has been called the “Southside Maker” or “Bookbinder” in reference to his elabo-

rate decorating tools (Figure 23). Apparently located somewhere near the Chesopean site in Virginia Beach, Virginia, the products of this maker have been recovered over a large area of the Chesapeake. Lacking raw materials, the Southside maker did not produce pipes in pinks and greens, but he frequently did agatize his pipes by mixing clays, and is the only pipemaker—other than Drue—to sliptrail his pipes with barber pole decoration.

The broad and distinctive variations of pipe color may represent production in response to a well-developed and sophisticated aesthetic by Drue’s patrons.

He is producing variations in his product to answer the needs of a sophisticated marketplace while exploring an artistic endeavor. Either due to clay availability or local preference, the traditional orange



Figure 23: The trail-slip “barberpole” decoration.

hue of terra-cotta is the most desirable product color, followed closely by buff and white pipes. The dark gray, agatized, and pink pipes are somewhat less in demand or address more specialized Providence pipe preferences. When considering the market Drue was addressing and the decorative variations found across the site, he is clearly one of Anne Arundel County’s first artists. The scarcity of Drue’s products on nearby sites in comparison to the extensive pipe-producing capabilities found at Swan Cove raise the question of where Drue’s pipes are being sold. Obviously there are seventeenth-century markets in the mid-Chesapeake Bay that have not yet been identified archaeologically.

Conclusion

The first, and perhaps most important, aspect of the Swan Cove kiln site, is simply its discovery. The local production of tobacco-pipes in the New World has been the subject of intense interest to historical archaeologists in those rare locales where it occurs. Nowhere is this more true than in the Chesapeake Bay region of Maryland and Virginia, where local pipes have been the focus of numerous historical theories, and where such a production site has been sought for decades. It had long been assumed that when such a site was found it would represent little more than the waste products of a minor cottage industry. Unlike the more formal enterprises in England or Holland, Chesapeake production was considered to be more likely the simple output of individuals, often lacking even a mold to produce the pipes, and probably firing them in their home fireplaces without the benefit of a kiln. Occasionally, evidence supporting such activity has even been recovered.

Swan Cove proved startlingly different than this conception. Emanuel Drue clearly possessed a kiln the equal of its European counterparts, capable of reaching extremely high temperatures. His muffles and kiln furniture derived from contemporary English examples, and indicate his national origin and/or training. He possessed English-style brass molds, and decorated his pipes with a large variety of homemade tools. Given a source of pure white clay, he was capable of producing pipes that were virtually indistinguishable from export varieties produced in London and elsewhere in England.

But Drue was not producing tobacco-pipes that were simply intended to copy the varieties made back home. Something more seems to have been at work here. In addition to using the terra-cotta clays available beneath his feet, Drue made a concerted effort to gather an incredible range of “exotic” local

clays. A mix of scientist and artist, Emanuel Drue experimented not only with different colors, but also blended them, applied slips to them, and decorated them with trailed clays and homemade tools.

Particularly interesting is the tendency to agatize and use trail-slip “barber pole” decoration seen in the pipes found in abundance at the Chesopean site in Virginia. The fact that Southside, Virginia is the region from which most of the Puritans migrated to the Providence settlement in Maryland is highly intriguing. Since Emanuel Drue is presumed to be part of this migration, the possibility of a connection between Drue and the Southside maker seems easy to imagine. Unfortunately, no historical documentation yet ties Drue to this region.

Another important factor that has come to light in the investigations of Swan Cove has to do with Drue’s products. The vast majority is either the Drue Type A angular elbow/Chesapeake form or the Drue Type B European-style belly bowl. The fact that the Drue Type B pipe receives simple European-style decoration, while Drue Type A pipe is more likely to have elaborate Chesapeake-style decoration, clearly implies two different markets are involved. Intuitively, one would assume that some individuals were more interested in smoking pipes that mimic the English exports, however, this could not be the explanation. Both types of Drue pipes occur in pure white, but only rarely. Since most of the belly bowls are terra-cotta colors, they simply would not be mistaken for English products, despite their shape.

An outgrowth of the Drue Type A/B dichotomy discovered in Emanuel Drue’s output has been a theory that similar dichotomies existed in the products of Virginia pipemakers. Taft Kaiser’s Virginia data seems to support this theory, including the propensity to decorate belly bowls in a more conservative, traditional fashion. However,

until the discovery of Swan Cove, it was assumed that the many angular elbow and belly bowl groups from Virginia were from different producers.

Finally, the Swan Cove results do extensive damage to a number of fondly held theories concerning the Chesapeake pipe. The early debate concerning European versus Native American origins for these pipes was eventually replaced with seductive suggestions that African American or Creole populations produced them. Since giving historical voice to unheard populations like slaves



Figure 24: Pipe assemblage from Feature 7.

is an understandably important aspect of colonial archaeology, researchers welcomed a readily recognizable marker in the artifactual record.

All available evidence, however, would indicate that Emanuel Drue, an English Puritan, was making the terra-cotta Chesapeake pipes at Swan Cove. Furthermore, rather than representing a potential anomaly, Drue clearly fits into a fairly widespread Virginia pattern of peers. They not only share dichotomous bowl forms, but also a clear decorative grammar involving alternating rouletted panels and stamping.

Even the theory that masters were smoking white pipes while servants and slaves smoked terra-cotta ones is done a certain degree of harm by the

Swan Cove results. First, the Drue Type A/B dichotomy discussed earlier, if anything, seems to argue that color is less significant than shape. Second, the two most elaborate and labor-intensive tobacco-pipes produced--perhaps even meant as "presentation pieces"--by Emanuel Drue were both done in terra-cotta.

One critical missing link is the lack of Drue products recovered elsewhere. So far, Drue's pipes have only been recovered from the sites of Drue's immediate neighbors in Providence. The level of pipe production points toward a substantial operation and corresponding output (Figure 24). Where, then, is Drue selling his wares? A clear possibility is that he marketed his pipes in regions that have received little or no archaeological investigation. Notable possibilities lie to the east, on Kent Island or the Eastern Shore of Maryland. If Drue pipes can be identified in locations more remote from the kiln, it will be significant to the evaluation of local trade networks in early colonial Maryland. Furthermore, finding Drue's pipes on other sites could elucidate questions about the pipes' production and demand in the marketplace. Does Drue make each form of pipe in response to the needs and requirements of his contemporaries? Is he an artist developing this form with little interest for or from the market place? Is having a pipe that is similar in so many ways to a Native American pipe form a statement by the colonists that they are in a new and different land? Do the belly bowl forms meet the needs of new European immigrants?

One thing that is clear is that Emanuel Drue is adapting Old World manufacturing techniques with New World influences as an outlet for distinct expression. If the clay tobacco-pipe is the highest manifestation of folk art found in the seventeenth-century Chesapeake, as maintained by Dan Mouer (1993), then Drue must stand among its masters.